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JUNE 4.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-two members present.

The following papers were presented for publication :—

“Descriptions of Twenty-nine species of Unionidæ from the United States.” By Isaac Lea.

“A Contribution to the Ichthyology of Alaska.” By Edw. D. Cope.

Note on Gamasus of the Ox.—Prof. LEIDY read an extract from a letter from Dr. C. S. Turnbull, in which it was stated that the writer had been misunderstood in relation to the *Acarus* of the Ox, described in the Proceedings for January 2d. He had seen the cattle killed, and was positive that the mites occupied the position in the ear of the steers while these were alive. Such being the case, the *acarus* may be viewed as a parasite of the Ox, and may be specifically named *GAMASUS AURIS*.

Mr. THOMAS MEEHAN presented some specimens of the common asparagus, and remarked that in consequence of observing last year so many plants that had evidently flowered, producing no seeds, he had this year examined them in a flowering condition and found them perfectly diœcious. Imperfect stamens existed in the female flowers, but they were never polleniferous. An occasional gynœcium in the male flower would make a weak attempt to produce a pistil, but no polleniferous flower ever produces a fruit. There was a great difference in the form of the male and female flowers. The former were double the length of the latter, and nearly cylindrical, while the female flower was rather campanulate. Other observers had nearly made the discovery of division in this plant. The old “English Botany” of Smith gave it the character of being occasionally imperfect, and the authors of “Deutschland Flora” considered it as occasionally Polygamous. But Mr. M. was satisfied from a half day’s investigation among many plants that in this region at least the asparagus is never perfect, but truly diœcious.

He had observed another matter, small, but which might be of importance to systematic botanists, as well as to those engaged in evolutionary studies. One flower had a quadrifid stigma, and a four-celled ovary. The trinate type, or its multiple, is so closely associated with the endogenous structure, that he considered this circumstance particularly worthy of note.

The male flowers seem very attractive to insects, various kinds

of which seem to feed on the pollen. The honey bee was a frequent visitor. None seemed to be attracted to the female flowers. In the division into separate sexes the plant had gained nothing in the way of aid by insect fertilization. Fertilization seemed wholly accomplished by the wind. The male flowers are produced in much greater abundance than the female ones.

Mr. M. added that this discovery had a more than usual practical importance. Many attempts had been made to improve the asparagus, as garden vegetables and the farm cereals had been improved; but it had often been questioned whether these improved forms would reproduce themselves from seed as other garden varieties did. The tendency of thought the few past years had been in the direction of the belief that permanent varieties could be raised, and several improved kinds had been sent out by seedsmen, and were popular to a considerable extent. He said he had himself inclined to this opinion; but this discovery of complete dioecism in asparagus, whereby two distinct individual forms were required to produce seed, rendered a true reproduction of one original parent impossible, as the progeny must necessarily partake of both forms.

Mr. Meehan further said he had been requested by one of the members, Professor Frazer, to call the attention of the Academy to an orange on the table, which had produced a second smaller fruit under the rind of the larger one. The orange externally presented nothing unusual, but on being peeled the second one was found of about one-fifth the size of the principal one, of a turbinate shape, and fitting into the lower larger one as into a cup. This upper secondary orange had the regular colored skin with its endopleura, and the whole inclosed by the regular skin of the primary fruit. He explained that a fruit was formed by the sudden arrestation of growth in a branch, and what would be under ordinary circumstances an elongated branch, with its several nodes and axillary leaves and buds, is to form a fruit compressed and condensed, so to speak, into the organized mass we call a fruit. In the orange before us, the central axis, after having had its elongating direction arrested, made another feeble departure onward, and the small orange was the result. These sudden accelerations of a nearly arrested growth are, though not common, sometimes seen in fruits. They have been most frequently seen in the pear. Here the renewed growth of the central axis bursts through the primary cuticle as seen by the manner in which it is drawn up with the secondary growth. He believed he had seen an instance of a pear making three series of growths in one fruit. In the larch it was quite common to find a branch arrested in its development to form a cone, push out again into vigorous growth at the apex, after resting as it were for nearly a month, while the cone was forming. These larch cones, with branches growing as it were completely through them, are very often seen. *Aurantia-*

ceous plants seem addicted to these irregularities. It was not unusual to find several young seedling plants spring from one orange seed.

JUNE 11.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-five members present.

Prof. COPE offered some remarks on the discoveries recently made by Prof. Marsh as to the structure and characters of the *Pythonomorpha*, based especially on material recently obtained by him in Kansas. As the writer had recently passed in review much similar material, he was much interested in Prof. Marsh's conclusions. These, he said, were of importance. In the first place, he had ascertained that what was formerly supposed to be the inner side of the quadrate bone was the outer side, a conclusion Prof. Cope thought entirely consistent with the other known relations of the parts.

Secondly. He had discovered the stapes, and had entirely confirmed the opinion of the speaker, which Prof. Marsh had apparently overlooked. This was stated as follows: 'the quadrate "is characterized by the presence of an oval pit. . . . Its use is uncertain, but there is some probability that it received the extremity of an osseous or cartilaginous styloid stapes. A groove on the under side of the suspensorium would accommodate such a rod, and in a position nearly similar to that which it occupies in many of the Ophidia." It is in precisely this position that Prof. Marsh is so fortunate as to have discovered it.

Thirdly. Prof. Marsh believes that he has found the columella. I have supposed it to be wanting, from the absence of its usual points of attachment on the parietal and pterygoid bones. It remains to compare the bone found by Prof. Marsh with ali- and orbito-sphenoid and ethmoid ossifications found in many saurians.

Fourthly. Prof. Marsh has observed the parieto-quadrate arch described by the speaker, and makes the interesting observation that it is formed of three elements, the median connecting the parietal with the opisthotic. This piece, he says, is "apparently the squamosal;" as the latter bone completes the zygomatic arch, it cannot occupy a position in the parieto-squamosal, unless it sends a branch in that direction.

Fifthly. He discovers the malar arch, proving it to be incomplete and supported by the postfrontal bone. Prof. Marsh also observes an ossification in the glenoid cavity of the opisthotic, which he regards as the pterotic (of "Huxley," which should be

¹ Trans. Amer. Philos. Soc., 1869, p. 180.